

Title (en)

METHOD FOR MANUFACTURING AND METHOD FOR CONNECTING CARBON FIBER

Title (de)

VERFAHREN ZUR HERSTELLUNG UND VERFAHREN ZUM VERBINDEN VON KOHLENSTOFFFASERN

Title (fr)

PROCÉDÉ DE FABRICATION ET PROCÉDÉ DE LIAISON DE FIBRE DE CARBONE

Publication

EP 3412803 A4 20190904 (EN)

Application

EP 17747421 A 20170131

Priority

- JP 2016018820 A 20160203
- JP 2017003477 W 20170131

Abstract (en)

[origin: EP3412803A1] A carbon fiber manufacturing method includes joining first and second target fiber bundles with a joining fiber bundle, and carbonizing the joined bundles by feeding them through one or more carbonization furnaces. The joining includes forming an overlap between a first end of the joining fiber bundle and a second end of the first target fiber bundle and jetting a fluid to the overlap to form a first entangled portion, and forming an overlap between a second end of the joining fiber bundle and a first end of the second target fiber bundle and jetting a fluid to the overlap to form a second entangled portion. When the first and second entangled portions each have two or more entangling points with a tensile strength not less than 400 N, the relationship defined by the inequality is satisfied: $40 > \{L2/(L2 - A)\} \times (S + 13)$, where L2 is a length (mm) of an elongation section inside a first carbonization furnace upstream in a feeding direction of the fiber bundles, A is a maximum distance (mm) between an entangling point in the first entangled portion and an entangling point in the second entangled portion, and S is an elongation (%) of the joined fiber bundles fed through the carbonization furnace.

IPC 8 full level

D01F 9/14 (2006.01); **B29C 65/00** (2006.01); **B65H 69/06** (2006.01); **D01F 9/22** (2006.01); **D01F 9/32** (2006.01); **D02J 1/08** (2006.01)

CPC (source: EP KR US)

B65H 69/061 (2013.01 - EP US); **D01F 9/14** (2013.01 - KR); **D01F 9/21** (2013.01 - EP US); **D01F 9/22** (2013.01 - EP KR US); **D01F 9/225** (2013.01 - EP US); **D01F 9/328** (2013.01 - EP US); **D02J 1/08** (2013.01 - EP US); **B65H 2701/314** (2013.01 - EP US); **D01D 10/02** (2013.01 - EP US)

Citation (search report)

- [X1] EP 2348143 A1 20110727 - TORAY INDUSTRIES [JP]
- [X1] US 2015233024 A1 20150820 - MISHIMA KUNIHIRO [JP], et al
- See also references of WO 2017135265A1

Cited by

EP3699333A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 3412803 A1 20181212; **EP 3412803 A4 20190904**; CN 108603309 A 20180928; CN 108603309 B 20210625; JP 2017137590 A 20170810; JP 6198864 B2 20170920; KR 102632661 B1 20240201; KR 20180103074 A 20180918; US 10988862 B2 20210427; US 2019040551 A1 20190207; WO 2017135265 A1 20170810

DOCDB simple family (application)

EP 17747421 A 20170131; CN 201780009451 A 20170131; JP 2016018820 A 20160203; JP 2017003477 W 20170131; KR 20187021476 A 20170131; US 201716074685 A 20170131